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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Kulak, Richard
Serial Number:	10/574,653
Filed:	04/04/2006
Group Art Unit:	3654
Examiner:	Kruer, Stefan
Title:	ELEVATOR ROLLER GUIDE WITH VARIABLE STIFFNESS DAMPER

APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Appellant now submits its brief in this appeal. A credit card authorization form is being submitted to pay the $540.00 fee. The Commissioner is authorized to charge Deposit Account No. 50-1482 in the name of Carlson, Gaskey & Olds for any additional fees or credit the account for any overpayment.

Real Party in Interest

Otis Elevator Company is the real party in interest. Otis Elevator Company is a business unit of United Technologies Corporation.

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Related Appeals and Interferences

There are no related appeals or interferences.

Status of Claims

Claims 1, 3, 5-10, 12-14 and 16-22 are pending and on appeal.

Claims 2, 4, 11 and 15 have been cancelled.

Claims 1, 3, 5-10, 12-14 and 16-22 stand rejected under 35 U.S.C. §103 as being upatentable over US Patent No. 5,289,902 (the *Fujita* reference) in view of US Patent No. 5,368,132 (the *Hollowell, et al.* reference).

Status of Amendments

There are no unentered amendments.

Summary of Claimed Subject Matter

An example embodiment upon which the claims read is shown in Figures 1 and 2. The independent claims on appeal are reproduced below with references to the description and drawings to indicate where the relevant portions of the example embodiment are found in the specification and drawings.

Independent claim 1 recites:

1. A roller guide device (26, page 3, line 3) for use in an elevator system, comprising:
   a base (30, page 3, line 6);
   at least one roller (32, page 3, line 7) supported by the base such that the roller is rotatable about a roller axis (34, page 3, line 9) and moveable relative to the base in at least one direction perpendicular to the roller axis (page 3, lines 12-14);
   a damper (40, page 3, line 15) that has a selectively variable stiffness and dampens the relative movement of the roller, the damper comprising a fluid having a selectively variable viscosity for varying the stiffness of the damper (page 3, lines 25-26); and
   a controller (50, page 3, line 29) that automatically increases the stiffness of the damper when an associated elevator car is stationary at a landing and

decreases the stiffness of the damper when the associated elevator car is moving (page 4, lines 25-28).

Independent claim 10 recites:

10. An elevator system, comprising:
a car frame (24, page 2, line 32);
at least one roller (32, page 3, line 7) supported for vertical movement with the frame, rotatable movement relative to the frame (34, page 3, line 9) and lateral movement relative to the frame (page 3, lines 12-14);
a selectively variable stiffness damper (40, page 3, line 15) that dampens the lateral movement of the roller relative to the frame, the damper comprising a fluid having a selectively variable viscosity for varying the stiffness of the damper (page 3, lines 25-26); and
a controller (50, page 3, line 29) that automatically increases the stiffness of the damper when the car frame is stationary at a landing and decreases the stiffness of the damper when the car frame is moving (page 4, lines 25-28).

Independent claim 14 recites:

14. A method of controlling lateral movement of an elevator car assembly (20, page 2, line 31) having at least one roller (32, page 3, line 7) for riding along a guide rail (28, page 3, line 4) to facilitate vertical movement of the car assembly, comprising:
selectively and automatically varying an ability of the roller to move laterally relative to the car assembly (page 3, lines 15 and 25-26);
decreasing the ability of the roller to move laterally relative to the car assembly when the car assembly is stationary at a landing by decreasing a viscosity of a fluid that controls the ability (page 4, lines 25-28); and
increasing the ability of the roller to move laterally relative to the car assembly when the car assembly is moving along the guide rail by increasing a viscosity of the fluid (page 4, lines 25-28).

Independent claim 18 recites:

18. A method of controlling lateral movement of an elevator car assembly (20, page 2, line 31) that includes a variable stiffness damper (40, page 3, line 15) having a fluid of a selectively variable viscosity (page 3, lines 25-26), comprising the steps of:
automatically increasing a viscosity of the fluid when the elevator car assembly is stationary at a landing (page 4, lines 25-28); and
automatically decreasing the viscosity of the fluid as the elevator car assembly moves away from the landing (page 4, lines 25-28).

Grounds of Rejection to be Reviewed on Appeal

Claims 1, 3, 5-10, 12-14 and 16-22 stand rejected under 35 U.S.C. §103 as being upatentable over US Patent No. 5,289,902 (the *Fujita* reference) in view of US Patent No. 5,368,132 (the *Hollowell, et al.* reference).

Argument

The Examiner's proposed combination cannot be made because it does not provide a workable result or it would require such significant redesign of the primary reference that it would entirely change the principle of operation of that reference. Additionally, the references do not teach what the Examiner contends so that even if the combination could be made, it does not provide the result suggested by the Examiner. There is no way to establish a *prima facie* case of obviousness based upon the Examiner's proposed combination.

The rejection of claims 1, 3, 5-10, 12-14 and 16-22
under 35 U.S.C. §103 must be reversed.

The Examiner contends that the claims on appeal are upatentable over the proposed combination of the *Fujita* and *Hollowell, et al.* references.

There is no *prima facie* case of obviousness because the references do not teach what the Examiner suggests. The Examiner admits that the *Fujita* reference fails to teach increasing the stiffness of the passive damper of that reference when an elevator car is at a landing. One of the problems with the Examiner's rejection is that neither does the *Hollowell, et al.* reference.

The Examiner misconstrues the teachings of the *Hollowell, et al.* reference. The Examiner suggests that the *Hollowell, et al.* reference teaches a controller that automatically increases the stiffness of a passive damper when an associated elevator car is at a landing. That

is not what the *Hollowell, et al.* reference teaches.

The position signal of column 3, line 10 in the *Hollowell, et al.* reference is used to "lock the cab to a landing" as stated in lines 11 and 12 of column 3. The way that occurs is not by increasing the stiffness of a passive damper. Instead, *Hollowell, et al.* teaches using electromagnetic actuators to force the cab platform 28 to move in a desired direction. As explained in column 4, lines 16-20, 51-55 and 60-68 of the *Hollowell, et al.* reference, the electromagnetic actuators operate in pairs differentially (e.g., moving in opposite directions) to attract the cab platform 28 toward the stem 60 of one of the rails 22. The platform 28 is moved by the actuators using a "net forward force" (line 61).

Actively moving a platform is not the same thing as changing the stiffness of a passive damper. Therefore, even if the combination could be made, the result is not what the Examiner contends and there is no *prima facie* case of obviousness. It is difficult to estimate what the actual result would be (if the combination could be made, which it cannot) because the operation of the Fujita reference and that of the Hollowell, et al. reference are so different from each other.

Another, separately dispositive, defect in the Examiner's rejection is that the proposed combination cannot be made. There are two basic reasons why the proposed combination cannot be made. One is that it does not provide a workable result.

The control signals in the *Hollowell, et al.* reference are used to generate a force for moving the platform 28 as described above. The arrangement in the *Fujita* reference is not capable of generating such a force. The fluid 22 in the *Fujita* reference is not capable of moving the lever 9 or the piston-shaped link 9c. Instead, it only controls how much the piston-shaped link 9c is able to move within the fluid 22 responsive to some outside force that would tend to move the piston-shaped link 9c during movement of the elevator car in the *Fujita* reference.

If one were to add the control strategy of the *Hollowell, et al.* reference to the device in the *Fujita* reference, nothing would happen as a result. There is no force applying capability in the *Fujita* embodiment that utilizes the fluid 22. Therefore, the proposed combination does not provide a workable result.

The second reason why the proposed combination cannot be made is that it would change the principle of operation of the primary reference, which is not permissible as explained in MPEP 2143.01(VI). If the Examiner is proposing to redesign the *Fujita* reference to be able to apply a force as suggested in the *Hollowell, et al.* reference, then that would change the principle of operation of the *Fujita* reference. In order to somehow be able to utilize the teachings of the *Hollowell, et al.* reference within the *Fujita* reference, the passive damper of *Fujita* would have to be replaced with an active force generator. Such a change would completely change the principle of operation of the *Fujita* reference. An active force generator that actively moves an object has a principle of operation that is the opposite of a passive damper that is incapable of generating a force. The proposed modification to the *Fujita* reference changes the principle of operation of the reference and is not permissible for attempting to manufacture a *prima facie* case of obviousness.

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CONCLUSION

The rejection under 35 U.S.C. §103 must be reversed. There is no prima facie case of obviousness. The Examiner's proposed combination cannot be made and, even if it could, the result would not be consistent with what the Examiner contends would be the result.

Respectfully submitted,

CARLSON, GASKEY & OLDS, P.C.

December 8, 2008
Date

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CERTIFICATE OF FACSIMILE

I hereby certify that this Appeal Brief, relative to Application Serial No. 10/574,653, is being facsimile transmitted to the Patent and Trademark Office (Fax No. (571) 273-8300) on December 8, 2008.

Theresa M. Palmateer

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APPENDIX OF CLAIMS

1. A roller guide device for use in an elevator system, comprising:

a base;

at least one roller supported by the base such that the roller is rotatable about a roller axis and moveable relative to the base in at least one direction perpendicular to the roller axis;

a damper that has a selectively variable stiffness and dampens the relative movement of the roller, the damper comprising a fluid having a selectively variable viscosity for varying the stiffness of the damper; and

a controller that automatically increases the stiffness of the damper when an associated elevator car is stationary at a landing and decreases the stiffness of the damper when the associated elevator car is moving.

3. The device of claim 1, including an elevator car motion indicator in communication with the controller and wherein the controller changes the damper stiffness responsive to a detected level of motion.

5. The device of claim 1, wherein the damper fluid comprises a magneto-rheological fluid.

6. The device of claim 5, including a field generator that generates a field that changes a viscosity of the magneto-rheological fluid.

7. The device of claim 6, wherein the controller controls the field generator.

8. The device of claim 7, including an indicator that provides an indication of elevator car vibration to the controller and wherein the controller controls the damper stiffness based upon an amount of vibration.

9. The device of claim 1, including a plurality of rollers and a variable stiffness damper associated with each of the rollers and wherein the controller individually controls the stiffness of each of the dampers.

10. An elevator system, comprising:

a car frame;

at least one roller supported for vertical movement with the frame, rotatable movement relative to the frame and lateral movement relative to the frame;

a selectively variable stiffness damper that dampens the lateral movement of the roller relative to the frame, the damper comprising a fluid having a selectively variable viscosity for varying the stiffness of the damper; and

a controller that automatically increases the stiffness of the damper when the car frame is stationary at a landing and decreases the stiffness of the damper when the car frame is moving.

12. The system of claim 10, including a vibration detector that provides an indication of a level of car frame vibration to the controller and wherein the controller varies the stiffness of the damper based upon the indication of the level of vibration.

13. The system of claim 10, wherein the damper fluid comprises a magneto-rheological fluid.

14. A method of controlling lateral movement of an elevator car assembly having at least one roller for riding along a guide rail to facilitate vertical movement of the car assembly, comprising:

selectively and automatically varying an ability of the roller to move laterally relative to the car assembly;

decreasing the ability of the roller to move laterally relative to the car assembly when the car assembly is stationary at a landing by decreasing a viscosity of a fluid that controls the ability; and

increasing the ability of the roller to move laterally relative to the car assembly when the car assembly is moving along the guide rail by increasing a viscosity of the fluid.

16. The method of claim 14, wherein the fluid comprises a magneto-rheological fluid and the method includes selectively applying a magnetic field to the fluid.

17. The method of claim 14, wherein there are a plurality of rollers and associated dampers that dampen lateral movement of the rollers and the method includes individually controlling the fluid viscosity of each of the dampers.

18. A method of controlling lateral movement of an elevator car assembly that includes a variable stiffness damper having a fluid of a selectively variable viscosity, comprising the steps of:

automatically increasing a viscosity of the fluid when the elevator car assembly is stationary at a landing; and

automatically decreasing the viscosity of the fluid as the elevator car assembly moves away from the landing.

19. The method of claim 18, comprising

receiving information from an elevator machine controller that indicates whether the elevator car assembly is stationary at a landing or is moving and automatically increasing or decreasing the viscosity of the fluid responsive to the information.

20. The device of claim 1, wherein the controller receives information from a machine controller regarding whether the elevator car is stationary or moving and the controller automatically increases or decreases the stiffness of the damper responsive to the information.

21. The system of claim 10, comprising

a machine controller that controls whether the car frame is stationary at a landing or moving, the controller receiving information from the machine controller indicating whether the car frame is stationary at a landing or moving and wherein the controller automatically increases or decreases the stiffness responsive to the information.

22. The method of claim 14, comprising

receiving information from a machine controller that indicates whether the car assembly is moving or stationary at a landing and varying the ability of the roller to move laterally relative to the car assembly responsive to the information.

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EVIDENCE APPENDIX

None.

RELATED PROCEEDINGS APPENDIX

None.